



Clean Energy Council submission to the Australian Energy Regulator: DER integration expenditure guidance note

The Clean Energy Council (CEC) welcomes the opportunity to provide feedback on the Australian Energy Regulator (AER) distributed energy resources (DER) integration expenditure guidance note.

The CEC is the peak body for the clean energy industry in Australia. We represent and work with Australia's leading renewable energy and energy storage businesses, as well as rooftop solar installers, to further the development of clean energy in Australia. We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

The CEC supports the development of AER guidance relating to how distribution network service providers (DNSPs) should prepare a DER integration strategy, which is not explicitly addressed by AER's existing guidance. The guidance note together with the Regulatory Investment Test for Distribution (RIT-D) provide a starting point to measure investment in DER expenditure. However, there are still limitations in this guidance as to how to encourage dynamic export limits, increase hosting capacity, tariff reforms, demand management strategy, implementation of dynamic operating envelopes and support to the integration of growing DER technologies into the grid.

The format of the business case in the guidance note should not be prescriptive based but rather principles based. The format of the business case should be flexible enough to for DNSPs to adapt to rapid changes in DER technologies and services and to encourage innovations. The proposed Value of Distributed Energy Resources (VaDER) methodology to undertake hosting capacity in the guidance note needs further clarifications. The VaDER method states that the DNSPs should clearly articulate their assumptions about changes in investments, operations, and environmental outcomes in both the base case and investment scenario. However, this methodology does not consider maximising benefits but rather look at cost comparisons between the base case scenario and the credible option with increasing the hosting capacity. The CEC encourage AER to include both a cost minimizing and benefit maximizing methodology to compare the base case with the credible options.

Further, the total electricity system is not a sufficient boundary for considering costs and benefits. It is essential to look at environmental and social impacts from rapid DER integrations beyond whole electricity system (at-least when these impacts could be quantified easily). The CEC also encourage AER to provide further guidance on quantifying wholesale market benefits, network and environmental benefits with more details beyond the boundaries considered in this guidance note.

We would be happy to discuss these issues in further detail with representatives of AER. We look forward to contributing further to this important area for policy development.

Question 1 Do you agree with the proposed guidance relating to how DNSPs should prepare a DER integration strategy?

The CEC agrees with AER's proposed guidance relating to how DNSPs should prepare a DER integration strategy as current DER integration expenditure is not explicitly addressed by AER's existing guidance. The DER integration expenditure has varied in nature, with different approaches taken towards the types of DER benefits and the quantification of these benefits, partly due to differences in network topographies, network visibility and access to network data.

The guidance note together with RIT-D provide a starting point to measure investment decisions regarding DER integration. However, there are still limitations in this guidance to encourage dynamic export limits, increase hosting capacity, tariff reforms, demand management strategy, implementation of dynamic operating envelopes and support the general growth of various DER technologies.

Question 2 Should the format of the business case be prescriptive? If so, how?

The format of the business case should not be prescriptive based but rather principles based. The format of the business case should be flexible enough to adapt to rapid changes in DER technologies and services and to encourage innovations. We support the AER providing guidance on business case for DER integration expenditure proposals, but caution against being overly prescriptive. This will ensure that DNSPs have enough flexibility to adapt their business cases according to their individual DER investment needs and the outcomes from customer engagements.

It might be good to have more explanations with examples as to how to set up a base case scenario and guidance on type of benefits and ways to quantify the overall benefits of DER integration projects.

Question 3 Are there particular input assumptions that should be consistent for all DNSPs?

We agree that DNSP's should use material that the Australian Energy Market Operator (AEMO) publishes in developing the National Transmission Network Development Plan (NTNDP), Integrated System Plan (ISP)-Step Change Scenario as a minimum, AER's RIT-D guidelines or similar documents as a starting point.

However, this should not limit DNSPs from using other source of inputs based on market data and models such as wholesale market modelling with better inputs and assumptions, and if available which should be used in combination with the basic principles outline in above resources.

Question 4 In what ways could DNSPs justify their assumed export limit in the base case scenario?

The base case represents a 'BAU' scenario and not a 'do nothing' scenario. The CEC also agree with the AER/CSIRO/CutlerMerz comment that use of static export limits as the base case should be treated with caution. This is because the lower the assumed static export limit, the higher the benefits of the business case. It suggested that where a static export is used as a base case, it should be demonstrated as to why that particular static export limit is appropriate (and not arbitrary).

Question 5 Are there particular examples where DER adoption forecasts may vary between the base case scenario and the investment case?

An example that DER adoption forecast could vary between base case scenario and investment could include looking into proposal to increase hosting capacity which might encourage further export limits from the default levels which might allow DER customers to export further electricity to grid. For

example, some grids managed by Horizon Power have reached a level of solar penetration where no further solar connections are permitted. This creates a situation of pent-up, unmet demand for solar connections. When steps are taken to increase hosting capacity and when that capacity is released to market, it is rapidly filled. In situations like this it would be reasonable to assume different DER adoption forecasts in the base case and investment case scenarios.

Question 6 Do you agree with the proposed criteria for undertaking hosting capacity assessments?

The proposed VaDER methodology to undertake hosting capacity needs further clarification. The VaDER method states that the DNSPs should clearly articulate their assumptions about changes in investments, operations, and environmental outcomes in both the base case and investment scenario. However, this methodology does not consider maximising benefits but rather looks at cost comparisons between base case and credible option of the increasing hosting capacity. The proposed criteria for undertaking hosting capacity should consider a net benefit maximising approach such as DER benefits including wholesale markets, network sector benefits, environmental benefits. Moreover, guidance on how to quantify these benefits would be useful to have.

We dispute the statement that, “Differences in network visibility are due to differences in DER penetration across networks”. Although high DER penetration may drive additional data acquisition, this is not the key determinant of network visibility. Differences in network visibility are due primarily to differences in access to voltage data on the low voltage network. In Victoria there is very good visibility because DNSPs have access to voltage data from smart meters. In states regulated under the *Power of Choice* framework visibility is poor because DNSPs do not have access to the voltage data available from meters. The Australian Energy Market Commission (AEMC) is currently undertaking a review of metering services and access to voltage data from meters is one issue being considered. Enabling access to voltage data by DNSPs would be an extremely low cost means of improving solar hosting capacity on low voltage networks.

Question 7 Are there other examples of approaches that DNSPs could adopt to assess network hosting capacity?

We encourage AER to work with AEMC to enable DNSPs to access voltage data from meters, which will help DNSPs to manage network hosting capacity related issues when integrating more DER into the grid. Please refer to answer to question six above for further details.

Question 8 Do you agree that the total electricity system is the appropriate system boundary for considering DER costs and benefits?

The total electricity system is not a sufficient boundary for considering costs and benefits. It is essential to look at environmental and social impacts from rapid DER integrations beyond whole electricity system (at-least when these impacts could be quantified easily). This applies for RIT-D guidelines as well and environmental/climate change and social impacts is not just an externality but rather a policy priority in the current situation.

Question 9 Do you agree that the methodology used to quantify wholesale market benefits should balance shorthand and longhand approaches?

Having both a shorthand and longhand approach will give a better choice for the DNSPs and reduce administrative costs and gives the DNSPs the chance to use the best suited approach in quantifying wholesale market benefits.

Therefore, it makes sense for DNSPs to adopt an approach under the RIT-D/T guidelines or an average long run marginal cost (LRMC) approach if there are known short-medium term constraints (specific project impacts). If there are no known constraints (but rather broad impacts), DNSPs can adopt a

shorthand approach such as calculating the average LRMC. Further, long-hand methodology is appropriate for projects above the RIT-D threshold, although the CEC strongly recommend the AER to review and reduce the threshold which is currently set at five million for DER investment projects under RIT-D guidelines.

We support the proposal to improve and further develop the shorthand methods. We note that electricity market modelling is limited to several proprietary models. It would be preferable to find ways of avoiding the need for DNSPs to make significant expenditure on market modelling.

Question 11 Do you have views on the AER's initial analysis and whether this approach could be applied in practice?

The AER's initial analysis looks at impact on dispatch cost instead of the wholesale prices. However, it is important to perhaps look at a combination of dispatch cost, wholesale price and total market benefits approaches when looking at the DER integration strategy. We believe that regardless of which of above methodologies are tested it is possible to test scenarios with additional PV generations as outlined in the current guidance note with the dispatchable cost methodology.

Question 12 Do you agree with the proposed principles for quantifying wholesale market benefits? Are there other principles that we should consider?

The CEC feels that the section 6.1 of the AER's draft DER integration expenditure guidance note indicates that the study was quite broad and has not considered all plausible situations. For example, the addition of DER on the NEM may delay augmentation, however in its local vicinity may increase the need for augmentation unless the DER asset is always controlled by the DNSP. We believe this to be the case as we read through the document, however there is surely a delay in control to the on-site Power Conditioning Systems (PCS) when a fault or grid event is determined.

Whilst we are not fully sure on the details of controlling the DER assets, we do not fully agree that section 6.1, wholesale market benefits are completely valid and understood within the document.

Question 13 Do you agree with the proposed methods for quantifying network benefits?

Currently the AER includes increase in variable energy generation, increase in flexible energy generation, increase in flexible capacity to quantify network benefits. However, the benefits of increasing customer satisfaction due to network services such as by allowing greater export limits and better choices could be considered.

Question 14 Do you agree with the proposed methods for quantifying environmental benefits?

The CEC generally agree with AER's suggestions on how to quantify the environmental benefits of avoided greenhouse gas emissions and considering jurisdictional requirement to consider the price of carbon, the DNSP should calculate the carbon benefits associated with its proposed investment. The CEC suggests AER to include benefits of carbon abatement based on the price set through the Federal Government's Emission Reduction Fund, a cost of carbon (or benefit of carbon abatement) if there is a jurisdictional requirement to do so.

Further, we advise AER to use the Electricity Sector Climate Information (ESCI) project data and assumptions when quantifying environmental benefits/climate change risk reduction due to integration of DER resources.

Question 15 Do you agree with the proposed method for quantifying changes in DER investment?

The CEC agrees that the treatment of DER investment costs only changes the calculation of benefits if the DNSP varies its forecast of DER adoption between the base case and the investment case.